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Feature Article - Impact of Y2K and the Sydney Hailstorm on National Accounts

The following article is reprinted from the June quarter 1999 issue of Australian National Accounts: National Income, Expenditure and Product (ABS Catalogue no. 5206.0). The article is in two parts, the first considers the impact on the national accounts of Y2K and the second considers the impact of the Sydney hailstorm.

EXPENDITURE ON THE YEAR 2000 PROBLEM

The year 2000 (Y2K) computer problem ('millennium bug') concerns many businesses and government units. This note explains how expenditures associated with work to deal with the problem impact upon economic activity recorded in the national accounts.

Y2K expenditures can be split into two broad types: expenditure to acquire new assets (including hardware and software) to replace assets that will not be able to be used beyond 31 December 1999 and rectification expenditure to ensure that existing assets will remain operational after this date.

Expenditure on new assets

Private expenditure on new computer hardware is reflected in the machinery and equipment component of private gross fixed capital formation. It is considered that this type of expenditure is captured properly in the Australian Bureau of Statistics (ABS) new fixed capital expenditure survey, which is the main quarterly data source for this component.

Private expenditure on the acquisition of new software is reflected in the intangible fixed assets component of private gross fixed capital formation. Both own-account production of new software and the acquisition of new proprietary software is measured in this component. A good annual data source - the ABS's economic activity survey - is available for measuring the value of new computer software. Results from the 1997-98 survey are reflected in the estimates for that year. Estimates for 1998-99 have been extrapolated from the 1997-98 benchmark. These extrapolations are based on observations of historical trends as well as movements in imports of computer software, which is used as an indicator series.

Public sector expenditure on the acquisition of new hardware and software is reflected in the public gross fixed capital formation estimates. Estimates of expenditure on hardware are obtained directly from the ABS's public finance system. Estimates of expenditure on new software are based on periodic benchmark studies, extrapolated using supplementary information obtained from a variety of sources.

Some of the hardware and software acquired to replace Y2K affected assets may be imported in which case there will be impacts on the imports of goods and services series. The regular data sources used to compile this series (i.e. customs records and surveys of businesses trade in services) are considered likely to fully capture these imports.

As the foregoing implies, expenditure on new software assets is capitalised, and not expensed, in the national accounts. An increasing number of businesses also account for such expenditure this way. However, some businesses continue to treat all or some of their expenditure on acquiring software as an expense in their accounts. Because of this, amounts to cover this expenditure are added back to the estimates from the ABS's survey of company profits estimates (which are based on business accounting records) as part of the process of compiling national accounts estimates of Gross Operating Surplus (GOS). (As the number of businesses treating expenditure on new software as an expense has declined, so has the amount added back to the survey of company profits estimates. This has the effect of reducing the growth in the national accounts GOS estimates relative to the survey of company profits estimates.)

Rectification expenditure

Non-wage and salary expenses (e.g. consultant charges) incurred by businesses to rectify existing software or hardware to ensure that it remains operational beyond 31 December 1999 are part of intermediate consumption. This means that value added is reduced by the amount of these expenses. Wages and salaries payable by businesses to their own employees for rectification work do not affect value added, as the increased wages and salaries are offset by reduced GOS.

For general government units, however, non-wage and salary expenses do not reduce value added, and wages and salaries payable to general government employees for rectification work are reflected in value added. This is because the GOS for general government units is considered to be equal to consumption of fixed capital and, unlike the case with businesses, not derived as a residual. Also, Y2K rectification expenses (both wage and salary and non-wage and salary) are reflected in the output of general government units which is, in turn, reflected in government final consumption expenditure.

While the indicator series used to compile gross value added measures for the various industries do not specifically capture the impact of Y2K rectification expenses on value added, it is considered that, for the most part, the potential for error is small and specific adjustments have generally not been made. This is particularly so given that the industry value added estimates are benchmarked to annual estimates that have been compiled on a basis that is fully consistent with the requirements of the national accounts.

The output, and most likely the value added, of businesses providing goods and services associated with Y2K rectification work, will obviously be affected by Y2K activity. It is thought that a significant proportion of these services would be provided by businesses engaged as consultants, and many of these businesses are likely to be in the property and business services industry. It is considered that the quarterly indicator used to estimate movements in the value added of this industry, which is hours worked, would adequately capture growth in value added associated with the provision of Y2K-related services.

Assessing the impact of Y2K activity

Because, for the most part, the impact of Y2K activity on the national accounts is embedded in the regular data sources used to compile the national accounts and not separately available, it is not possible to derive specific estimates of the impact of this activity. The ABS has conducted, in October 1998, a survey on the Y2K problem and this survey collected information on expenditures associated with the problem. However, the usefulness of these estimates in terms of assessing the impact of the expenditures on the national accounts is limited because:

- only ranges of expenditure, rather than specific amounts, were collected;

- no distinction was made between expenditure of a capital nature and rectification expenses, or between amounts payable or wages and salaries, on the one hand, and goods and services provided by other businesses, on the other;
- no information was collected on when expenditure occurred or was expected to occur; and the scope of the survey was restricted to private sector businesses plus public sector businesses in selected industries only.

In analysing the impact of Y2K activity, consideration should also be given to the extent to which Y2K-related expenditure may have 'crowded out' other expenditure. For example, a business with an ongoing program of maintenance of software systems may have diverted the relevant resources to Y2K rectification work, rather than adding additional resources. In this case, the increased costs associated with the Y2K expenditure would be offset by reduced costs elsewhere, with no net impact on the business's value added. Anecdotal evidence suggests that there are many business and general government units that have diverted resources in this way. In these cases, the affect of Y2K rectification work on Gross Domestic Product (GDP) would be minimal.

SYDNEY HAILSTORM

On 14 April 1999 parts of Sydney were hit by a severe hailstorm that inflicted significant damage to property, including dwellings and motor vehicles. Since then, there has been economic activity associated with the repair and replacement of damaged property. It is likely that this activity will continue to about the middle of 2000, although most of it will probably occur within the first six months or so following the storm.

Many national accounts aggregates may be affected by the economic activity associated with damage caused by the storm. Those for which the impact could potentially be significant include:

- Household final consumption expenditure. The value of repairs to and the replacement of motor vehicles used for personal use will be reflected in this item. The value of repairs to dwellings is not included in this item, as these repairs are considered to be intermediate consumption of the units owning the dwellings.
- Gross fixed capital formation - machinery and equipment. The acquisition by businesses of new assets to replace those damaged in the hailstorm will be reflected in this item, including the replacement of motor vehicles used for business purposes. The cost of repairs to business assets, which form part of intermediate consumption, is not included in this item.
- Compensation of employees. Wages and salaries payable to employees involved in the repair of assets will be reflected in this item.
- GOS and gross mixed income. Any increases in the returns to the owners of businesses involved in the repair of assets will be reflected in this item. Increased expenses of businesses with assets requiring repair will be reflected as a reduction to the returns to the owners of these businesses. Also, the value of GOS on dwellings owned by persons will fall to the extent of additional repair costs associated with the hailstorm.
- Industry gross value added. The value added associated with repair work will be reflected in the gross value added of the relevant industries. For example, value added associated with repairs to dwellings and other buildings will be reflected in the value added of the construction industry. However, the value added of industries with businesses with assets requiring repair and of the 'ownership of dwellings' industry will be reduced because of

increased intermediate consumption associated with the repair expenses.

- Household income - secondary income receivable - non-life insurance claims. Insurance claims payable to households as the result of hail storm damage will be reflected in this item.

In summary, the repair of damage to dwellings, other buildings and other business assets will have no direct affect on GDP. However, GDP will be affected by the acquisition of assets to replace those damaged beyond repair, and by the repair of motor vehicles for personal use and other personal assets.

It is possible that some of the economic activity associated with the aftermath of the hailstorm will take the place of activity that would have otherwise occurred. For example, the diversion of roof-tilers in Sydney to repair hail-damaged dwellings might mean that the construction of new dwellings is less than it otherwise would have been.

For the most part, the regular data sources used to compile the quarterly national accounts will reflect, where relevant, activity associated with the hailstorm. For this reason, it would be extremely difficult to separately identify the impact of the hailstorm from other economic activity. Appropriate adjustments have been or will be made in the few instances where the regular sources do not or will not adequately capture the impact.

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